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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,490	11/20/2001	Uwe Hildebrand	53806-00004USPX	8766

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ERICSSON INC.
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EXAMINER

LE, DANH C

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,490

Applicant(s)

HILDEBRAND ET AL.

Examiner

DANH C LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-9, 11, 12, 15-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Jin (US 6,449,466).**

As to claim 1, Jin teaches a base transceiver station (figure 3 and col.5, line 63-col.6, line 57) for a radio communication system, the base transceiver station having a transmitter unit, a receiver unit (col. 4, lines 23-41) and a transmit path between the transmitter unit and an antenna, wherein the receiver unit determines output data from received signals and the transmitter unit converts input data into transmitted signals and pre-distorts the transmitted signals using at least one compensation value, and wherein the base transceiver station further comprises:

a branching unit for transferring at least a portion of a transmitted signal from the transmit path to the receiver unit (branch 330 to 335) and

a processing unit (355) which is adapted to receive a representation of the input data and the output data, the processing unit being further adapted to compare the input data to the output data, to determine a first compensation value for the pre-distortion

according to the comparison, and to update the compensation value of the transmitter unit with the first compensation value.

As to claim 2, Jin teaches the base transceiver station according to claim 1, wherein the branching unit comprises a converter (310) for converting the frequency of the transferred signal to the input range of the receiver unit.

As to claim 3, Jin teaches the base transceiver station according to claim 2, wherein the converter comprises a mixer (315) and an oscillator (320) and the mixer mixes a signal generated by the oscillator and the transferred signals.

As to claim 4, Jin teaches the base transceiver station according to claim 1, wherein the branching unit comprises an element for delaying the transferred signal (col.1, line 63-col.2, line 4).

As to claim 5, Jin teaches the base transceiver station according to claim 2, wherein the branching unit comprises an element for delaying the transferred signal (col.1, line 63-col.2, line 4).

As to claim 6, Jin teaches the base transceiver station according to claim 1, wherein the branching unit comprises a connection between the transmit path and a receiver path connecting an antenna and the receiver unit (figure 3, 330 to 255 and 335).

As to claim 7, Jin teaches the base transceiver station according to claim 2, wherein the branching unit comprises a connection between the transmit path and a receive path connecting an antenna and the receiver unit (figure 3, 330 to 255 and 335).

As to claim 8, Jin teaches the base transceiver station according to claim 1, wherein the transmit path and a receive path connecting an antenna and the receiver unit have a common section and the branching unit feeds the transferred signal into the common section (col.1, line 63-col.2, line 4).

As to claim 9, Jin teaches the base transceiver station according to claim 2, wherein the transmit path and a receive path connecting an antenna and the receiver unit have a common section and the branching unit feeds the transferred signal into the common section (col.1, line 63-col.2, line 4).

As to claim 11, Jin teaches the base transceiver station according to claim 1, wherein the branching unit is connected selectively to the transmit path and a receive path with a device selected from a group comprising a coupler (330) and a switch.

As to claim 12, Jin teaches the base ase transceiver station according to claim 1, wherein a combining and distribution unit comprises the branching unit (col.1, line 63-col.2, line 4).

As to claim 15, Jin teaches a base transceiver station according to claim 1, wherein the processing unit determines further compensation values for different frequencies of transmitted signals (col.8, lines 3-25).

As to claim 16, the claim is a method claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 17, Jin teaches the method according to claim 16, wherein the first transmitted signals are determined using a preceding compensation value and the

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preceding compensation value is adjusted by the first compensation value (col.1, line 63-col.2, line 4).

As to claim 18, Jin teaches the method according to claim 16, wherein the frequency of the transferred signal is converted to the input range of the receiver unit (col.1, line 63-col.2, line 4).

As to claim 19, Jin teaches the method according to claim 17, wherein the frequency of the transferred signal is converted to the input range of the receiver unit (col.1, line 63-col.2, line 4).

As to claim 20, Jin teaches the method according to claim 16, wherein the signal is transferred to the receiver unit with a delay (col.1, line 63-col.2, line 4).

As to claim 21, Jin teaches the method according to claim 17, wherein the signal is transferred to the receiver unit with a delay (col.1, line 63-col.2, line 4).

As to claim 25, the claim is a method claim of claim 15; therefore, the claim is interpreted and rejected as set forth as claim 15.

As to claim 26, Jin teaches method according to claim 16, wherein the method is performed during a low traffic period (col.4, line 65-col.5, line 11).

As to claim 27, the claim is a computer program claim of claim 1; therefore, the claim is interpreted and rejected as set forth as claim 1.

As to claim 28, Jin teaches an article according to claim 27, wherein the program unit is loadable into the processor unit (figure 3,355) and executable in the base transceiver station (col.4, line 65-col.5, line 11).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jin in view of Loostrom (US 6,304,747).

As to claim 10, Jin teaches a base transceiver station according to claim 1, Jin fails to teach the branching unit is connected to the transmit path near an antenna reference point. Frank teaches the branching unit is connected to the transmit path near an antenna reference point (col.2, lines 4-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Loostrom into the system of Jin in order to test and type active antennas having distributed electronics for a certification according to standards for GSM, DCS and PDC.

3. Claims 13-14, 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jin in view of Frank (US 6,636,555).

As to claims 13, 16 and 17, Jin teaches a base transceiver station according to claim 1, Jin fails to teach the content of a transmitted signal corresponds to a complex signal vector. Frank teaches the content of a transmitted signal corresponds to a complex signal vector (col.10, line 65-col. 11, line 15). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide

the teaching of Frank into the system of Jin in order to represent the overall amplitude of the signal.

As to claims 14 and 24, Jin teaches a base transceiver station according to claim 13, Jin fails to teach the transmitted signals are EDGE signals or UMTS signals. Frank teaches the transmitted signals are EDGE signals or UMTS signals (col.9, lines 58-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Frank into the system of Jin in order to reduce the amplitude of the transmission signal eliminating the need for larger and more expensive amplifiers.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Jin et al (US 6,693,974) teaches the adaptive digital predistortion circuit using adjacent channel power profile and method of operation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANH C LE whose telephone number is 703-306-0542. The examiner can normally be reached on 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WILLIAM TROST can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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